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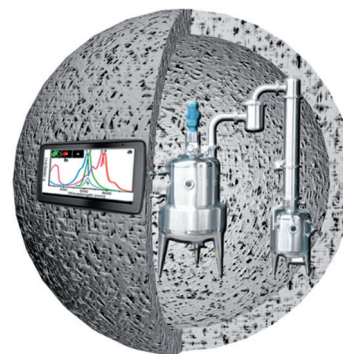


Catalysis

M. Pérez-Lorenzo, B. Vaz, V. Salgueiriño, M. A. Correa-Duarte*

Hollow-Shelled Nanoreactors Endowed with High Catalytic Activity

Sleepy hollows wake up: The design of different hollow-shelled nanoreactors is reviewed, analyzing the effects of both the shells and the active metal nanoparticles on the overall catalytic efficiency. Attention is focused on the methods used to prepare these hybrid nanocomposites and their different applications. Future perspectives on innovative architectures and further uses in catalysis are also addressed.



Chem. Eur. J.
DOI: 10.1002/chem.201301802

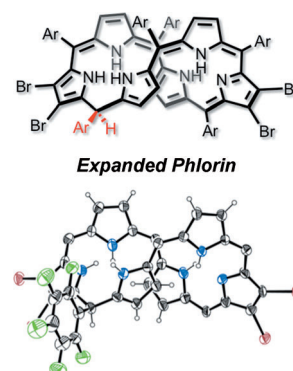


Porphyrinoids

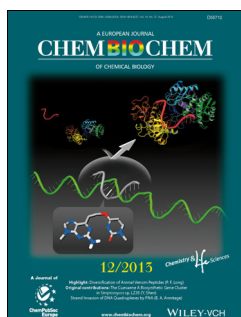
T. Higashino, A. Osuka*

2,3,17,18-Tetrahalohexaphyrins and the First Phlorin-type Hexaphyrins

Exphlorin' all avenues: 2,3,17,18-Tetrahalohexaphyrins were prepared by acid-catalyzed condensation of 3,4-dihalopyrroles and dipyrromethane-dicarbonyl. These β -tetrahalogenated hexaphyrins display variable structural and electronic properties depending upon the halogen atom and the number of π -electrons. Tetrabromo- and tetrachloro[28]-hexaphyrin were further reduced to provide phlorin-type hexaphyrins.



Chem. Asian J.
DOI: 10.1002/asia.201300474

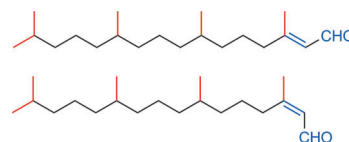


Pheromones

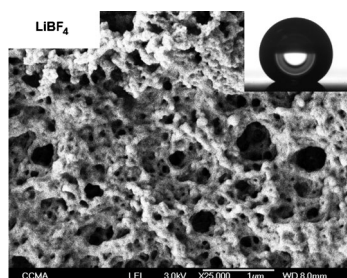
B. Fürstenau, L. Muñoz, M. Coca-Abia, G. Rosell, A. Guerrero,*
C. Quero*

Phytal: A Candidate Sex Pheromone Component of the Moroccan Locust *Dociostaurus maroccanus*

Chemical communication in locusts: A candidate sex pheromone component of the Moroccan locust *Dociostaurus maroccanus* has been identified by chromatographic, spectrometric and chiral HPLC analyses as phytal (Z and E isomers). The compound's biosynthesis proceeds from oxidation of phytol, and it displays attractant activity on both sexes.

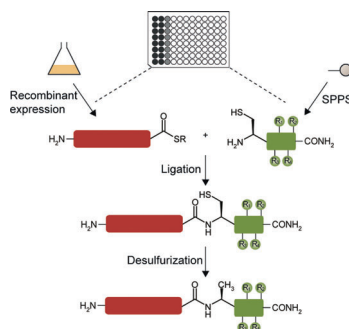


ChemBioChem
DOI: 10.1002/cbic.201300247



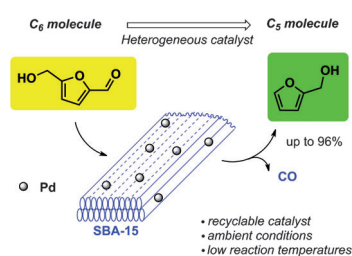
ChemPhysChem

DOI: 10.1002/cphc.201300448



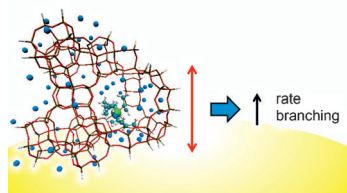
ChemMedChem

DOI: 10.1002/cmdc.201300290



ChemSusChem

DOI: 10.1002/cssc.201300190



ChemCatChem

DOI: 10.1002/cctc.201300232

Conducting polymers

O. Dunand, T. Darmanin, F. Guittard*

Superhydrophobic Conducting Polymers Based on Hydrocarbon Poly(3,4-Ethylenedioxysephenone)

Sitting on holes: Superhydrophobic surfaces with high adhesion are obtained by electrodeposition of conducting polymers, hydrocarbon poly(3,4-ethylenedioxysephenone). Such properties are specifically obtained using long alkyl chains ($C_{12}H_{25}$) and lithium tetrafluoroborate in propylene carbonate as electrolyte (see picture).

Therapeutic Peptides

L. Albertsen, S. Østergaard, J. F. Paulsson, J. C. Norrild,* K. Strømgaard*

A Parallel Semisynthetic Approach for Structure–Activity Relationship Studies of Peptide YY

It's all parallel: A semisynthetic approach was used to study the effect of C-terminal modifications of the appetite-reducing gut hormone peptide YY on interaction with its receptor. The approach involved ligation of a recombinant thioester building block with a suite of synthetic cysteine-containing peptides followed by desulfurization; this was performed in a parallel one-pot fashion.

Biomass Conversion

Y.-B. Huang, Z. Yang, M.-Y. Chen, J.-J. Dai, Q.-X. Guo, Y. Fu*

Heterogeneous Palladium Catalysts for Decarbonylation of Biomass-Derived Molecules under Mild Conditions

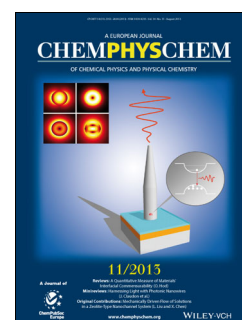
Workin' 6 to 5: A highly active heterogeneous catalyst, Pd/SBA-15(DP), promotes the selective decarbonylation of biomass-derived HMF to furfural alcohol with a high yield, up to 96%, in mild conditions. The route offers a simple and effective method of linking C_6 and C_5 molecules in the biomass conversion value chain. In addition to HMF the catalyst is effective towards the decarbonylation of other biomass-derived aldehydes, also.

Oligomerization

A. N. Mlinar, O. C. Ho, G. G. Bong, A. T. Bell*

The Effect of Noncatalytic Cations on the Activity and Selectivity of Nickel-Exchanged X Zeolites for Propene Oligomerization

Give me some space! The presence of alkali metal and alkaline earth cations increases the available space within high aluminum content faujasite zeolites, which leads to higher propene oligomerization activity and increased branching in dimer products.



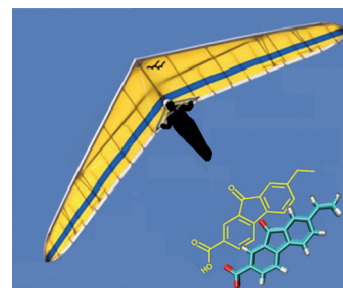


Tubulins

F. Calogero, S. Borrelli, G. Speciale, M. S. Christodoulou, D. Cartelli, D. Ballinari, F. Sola, C. Albanese, A. Ciavolella, D. Passarella,* G. Cappelletti, S. Pieraccini, M. Sironi*

9-Fluorenone-2-Carboxylic Acid as a Scaffold for Tubulin Interacting Compounds

Tubulin as the target: The introduction of a hydrophobic group at position 7 of 9-fluorenone-2-carboxylic acid (see structure) generates new tubulin binders, the design of which is suggested by modeling studies. The antiproliferative activity on two different cell lines, fluorescent microscopy, flow cytometry, and sedimentation assay tests confirmed the supposed mechanism.



ChemPlusChem
DOI: 10.1002/cplu.201300036

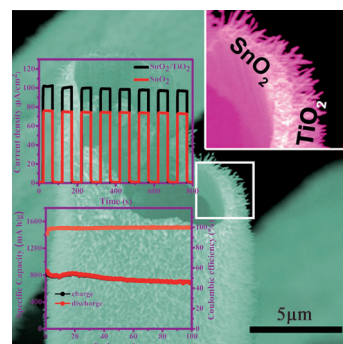


Heterojunction Nanostructures

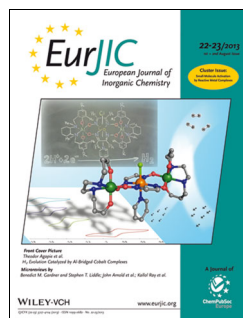
X. Hou, X. Wang, B. Liu, Q. Wang, Z. Wang, D. Chen,* G. Shen*

SnO₂@TiO₂ Heterojunction Nanostructures for Lithium-Ion Batteries and Self-Powered UV Photodetectors with Improved Performances

An effective strategy is explored to prepare a hybrid material, which consists of rutile SnO₂ nanoparticles and rutile TiO₂ nanorods and can be effectively used in lithium-ion batteries and self-powered UV photodetectors.



ChemElectroChem
DOI: 10.1002/celec.201300053

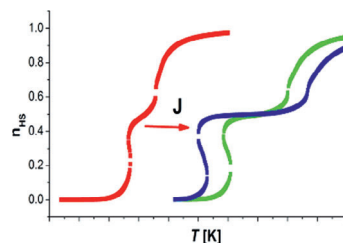


3D Spin-Crossover Systems

D. Chiruta, J. Linares,* Y. Garcia,* P. R. Dahoo, M. Dimian

Analysis of the Hysteretic Behaviour of 3D Spin Crossover Compounds by Using an Ising-Like Model

The effects of size, pressure and interactions on 3D spin crossover systems within the framework of an Ising-like model are discussed.



Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.201300412

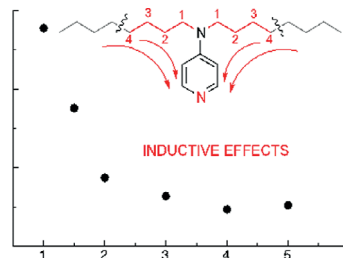


Lewis Base Catalysis

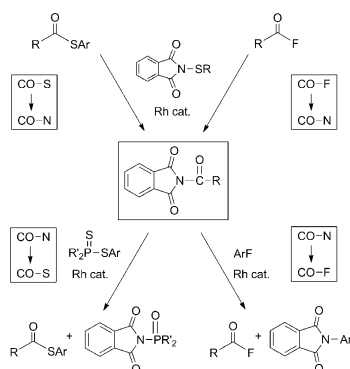
R. Tandon, T. A. Nigst, H. Zipse*

Inductive Effects through Alkyl Groups – How Long is Long Enough?

Substituent effects of linear alkyl groups show a saturation effect beyond four carbon atoms for numerous properties of 4-(dialkylamino)pyridines as test substrates. These observations can be rationalized by using an increment-based method for the calculation of inductive substituent effects.



Eur. J. Org. Chem.
DOI: 10.1002/ejoc.201300486



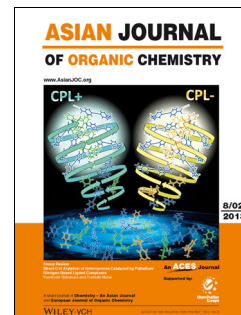
Asian J. Org. Chem.
DOI: 10.1002/ajoc.201300094

N-Acylphthalimide Chemistry

G. Li, M. Arisawa,* M. Yamaguchi*

Rhodium-Catalyzed Synthesis and Reactions of N-Acylphthalimides

Method of many talents: The synthesis and reactions of N-acylphthalimides are catalyzed by a complex of [RhH(PPh₃)₄] and 1,2-bis(diphenylphosphino)benzene (dppBz). N-Acylphthalimides can be synthesized by the imidation of thioesters or acid fluorides with N-(organothio)phthalimides. Thioesters, N-(phosphinoyl)phthalimides, acid fluorides, and N-(tetrafluoroaryl)phthalimides can also all be synthesized by using this method.



ChemViews magazine
DOI: 10.1002/chemv.201300087

Organic Synthesis

Jonathan Rose

The Audience Wants More: A Good Article Tells a Story

Professor Bruce Lipshutz, University of California, USA, discusses his continued fascination with organic chemistry and the new challenges brought by the need for organic chemists to avoid using environmentally harmful organic solvents. He also talks about how vital writing is in communicating science, and that with great science and good writing the passion behind the prose can be conveyed.

